

Installation Instructions

for use by heating contractor

VIESSMANN

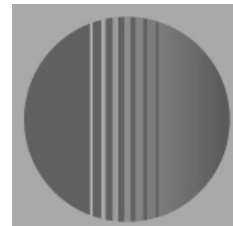
Please file in Service Binder

Vitocell 300

EHA Series

Indirect-fired domestic hot water storage tank
42 to 120 USG / 160 to 450 ltr capacity

VITOCELL-H 300



CAUTION

THE HEAT TRANSFER MEDIUM MUST BE WATER OR OTHER NON-TOXIC FLUID HAVING A TOXICITY RATING OR CLASS OF 1, AS LISTED IN CLINICAL TOXICOLOGY OF COMMERCIAL PRODUCTS, 5TH EDITION.

THE PRESSURE OF THE HEAT TRANSFER MEDIUM MUST BE LIMITED TO A MAXIMUM OF 30 PSIG BY AN APPROVED SAFETY OR RELIEF VALVE (SEE PAGE 2).

IMPORTANT

Read and save these instructions for future reference.



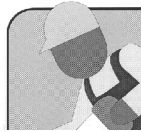
Safety, Installation and Warranty Requirements

Please ensure that this manual is read and understood before commencing installation. Failure to comply with the issues listed below and details printed in this manual can cause **product/property damage, severe personal injury, and/or loss of life**. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

■ Licensed professional heating contractor

The installation, adjustment, service, and maintenance of this equipment *must be* performed by a licensed professional heating contractor.

► Please see section entitled "Important Regulatory and Installation Requirements".



■ Advice to owner

Once the installation work is complete, the heating contractor must familiarize the system operator/ultimate owner with all equipment, as well as safety precautions/requirements, shut-down procedure, and the need for professional service annually before the heating season begins.

■ Product documentation

Read all applicable documentation before commencing installation. Store documentation near product in a readily accessible location for reference in the future by service personnel.

► For a listing of applicable literature, please see section entitled "Important Regulatory and Installation Requirements".



■ Warranty

Information contained in this and related product documentation must be read and followed. *Failure to do so renders warranty null and void.*



CAUTION

THE HEAT TRANSFER MEDIUM MUST EITHER BE POTABLE WATER OR CONTAIN ONLY SUBSTANCES WHICH ARE RECOGNIZED AS SAFE BY THE U.S. FOOD AND DRUG ADMINISTRATION.

THE PRESSURE OF THE HEAT TRANSFER MEDIUM MUST BE MAINTAINED LESS THAN THE NORMAL MINIMUM OPERATING PRESSURE OF THE POTABLE WATER SYSTEM.

	Page
Safety	
Important Regulatory and Installation Requirements	4
General Information	
About these Instructions	5
Product Information	5
Set-up	
Tank Set-up	6
Transport and Handling	
– Removing panels and insulation	7
– Installing panels and insulation	9
Multiple Tank Set-up	11
Connections	
Orientation and Dimensions	12
Control Connections	
Sensor well and installation of a DHW tank temperature sensor or aquastat	13
Boiler Water Connections (heat exchanger connection)	
Individual DHW tank	14
Multiple DHW tanks	15
Steam Heating Connections (heat exchanger connection)	
Individual DHW tank	16
Multiple DHW tanks	17
Domestic Water Connections	18
Recirculation Connections	21
Appendix	
Pressure Drop Information	22
Post Installation ...	
Start-up information	23
Service Binder	23

Important Regulatory and Installation Requirements

Codes

The installation of indirect-fired hot water storage tanks might be governed by individual local rules and regulations for this type of product, which must be observed. The installation of this unit shall be in accordance with local codes. Always use latest editions of codes.

In the Commonwealth of Massachusetts, all plumbing work must be done by a licensed plumber or gas-fitter and for gas installations, all gas piping must be done by a licensed gas-fitter."

Mechanical room

Ensure the mechanical room complies with the requirements of the system design guideline and/or technical data manual.

The tank must be installed in a mechanical room which is never subject to freezing temperatures.

If not in use and danger of freezing exists in the mechanical room, ensure water in tank is drained.

→ Please carefully read this manual prior to attempting installation. Any warranty is null and void if these instructions are not followed.

This product must be installed observing not only the information and instructions provided in the pertinent product literature (see list), but also all local, provincial/state plumbing and building codes, as they apply to this product and all periphery equipment.

For information regarding other Viessmann System Technology componentry, please reference documentation of the respective product.

We offer frequent installation and service seminars to familiarize our partners with our products. Please inquire.



WARNING

If the heating system itself is to be filled with Glycol or any other antifreeze, the system fill must be of non-toxic or food grade antifreeze. In any circumstance, a non-toxic fluid must be used. Ensure a copy of the Material Safety Data Sheet (MSDS) is supplied to the operator/ultimate owner of the system.

Working on the equipment

The installation, adjustment, service, and maintenance of this equipment must be done by a **licensed professional heating contractor** who is qualified and experienced in the installation, service, and maintenance of hot water heating systems. There are no user serviceable parts on this equipment.

Ensure **main power** supply to equipment, the heating system, and all external controls has been **deactivated**. **Close main oil or gas supply valve**. Take precautions in both instances to avoid accidental activation of power during service work.

→ The completeness and functionality of field supplied electrical controls and components must be verified by the heating contractor. These include low-water cut-offs, flow switches (if used), staging controls, pumps, motorized valves, air vents, thermostats, temperature controls, etc.

Important Regulatory and Installation Requirements (Continued)

Technical literature

Literature applicable to all aspects of the Vitocell:

- Technical Data Manual
- Installation Instructions
- Start-up/Service Instructions
- Operating Instructions and User's Information Manual

→ *Leave all literature at the installation site and advise the system operator/ultimate owner where the literature can be found. Contact Viessmann for additional copies.*

About These Instructions



Take note of all symbols and notations intended to draw attention to potential hazards or important product information. These include "WARNING", "CAUTION", and "IMPORTANT". See below.



WARNING

Indicates an imminently hazardous situation which, if not avoided, could result in death, serious injury or substantial product/property damage.

→ *Warnings draw your attention to the presence of potential hazards or important product information.*



CAUTION

Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product/property damage.

→ *Cautions draw your attention to the presence of potential hazards or important product information.*

IMPORTANT

→ *Helpful hints for installation, operation or maintenance which pertain to the product.*



→ *This symbol indicates that additional, pertinent information is to be found in column three.*



→ *This symbol indicates that other instructions must be referenced.*

Product Information

42 and 53 USG / 160 and 200 ltr capacity

Indirect-fired domestic hot water storage tank with one heat exchanger coil for use with hot water heating boilers.

92 and 120 USG / 350 and 450 ltr capacity

Indirect-fired domestic hot water storage tank with one heat exchanger coil for use with hot water heating boilers, commercial heating plants, and low-temperature heating systems (larger heating surface).

Tank Set-up

For 92 USG / 350 ltr tank capacity only:
If a boiler is to be installed on top of the tank, arrange boiler to lock into the front positioning pins of the tank.

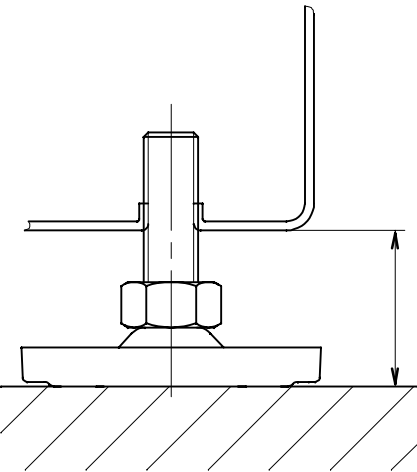


Fig 1.
Leveling bolt

- For narrow passageways, remove lower portion of crating and carry DHW tank to its installation location by means of crating boards mounted on the tank lengthwise.
- See *Installation Instructions of the "Transport Handles" (accessory)* to move the tank into the mechanical room.
- Packaged M 8 bolts are necessary for the set-up of a multiple tank installation.
- Leave adequate clearance to the wall or other objects enabling easy access to the aquastat (where applicable).
- Locate tank(s) on flooring or foundation capable of supporting the weight of the tank(s) filled with water.
- The tank does not require a special foundation and can be placed directly on the floor. If, for cleanliness purposes, the tank is to be kept off the floor, a foundation can be used for each tank or tank battery.
- A minimum clearance of 17 3/4" / 450 mm must be maintained at the back of the tank for the installation of the sensor well and DHW tank temperature sensor.
- Level tank using leveling bolts on tank frame.

Recommended installation clearances for service access

Storage capacity		USG Ltr	42 160	53 200	92 350	120 450
Rear		inches mm	18 460	18 460	18 460	18 460
Sides	May be reduced if rear pipe connections can be reached with less clearance	inches mm	12 300	12 300	12 300	12 300
Top		inches mm	12 300	12 300	12 300	12 300
Front		inches mm	24 600	24 600	24 600	24 600

Minimum clearances to combustibles

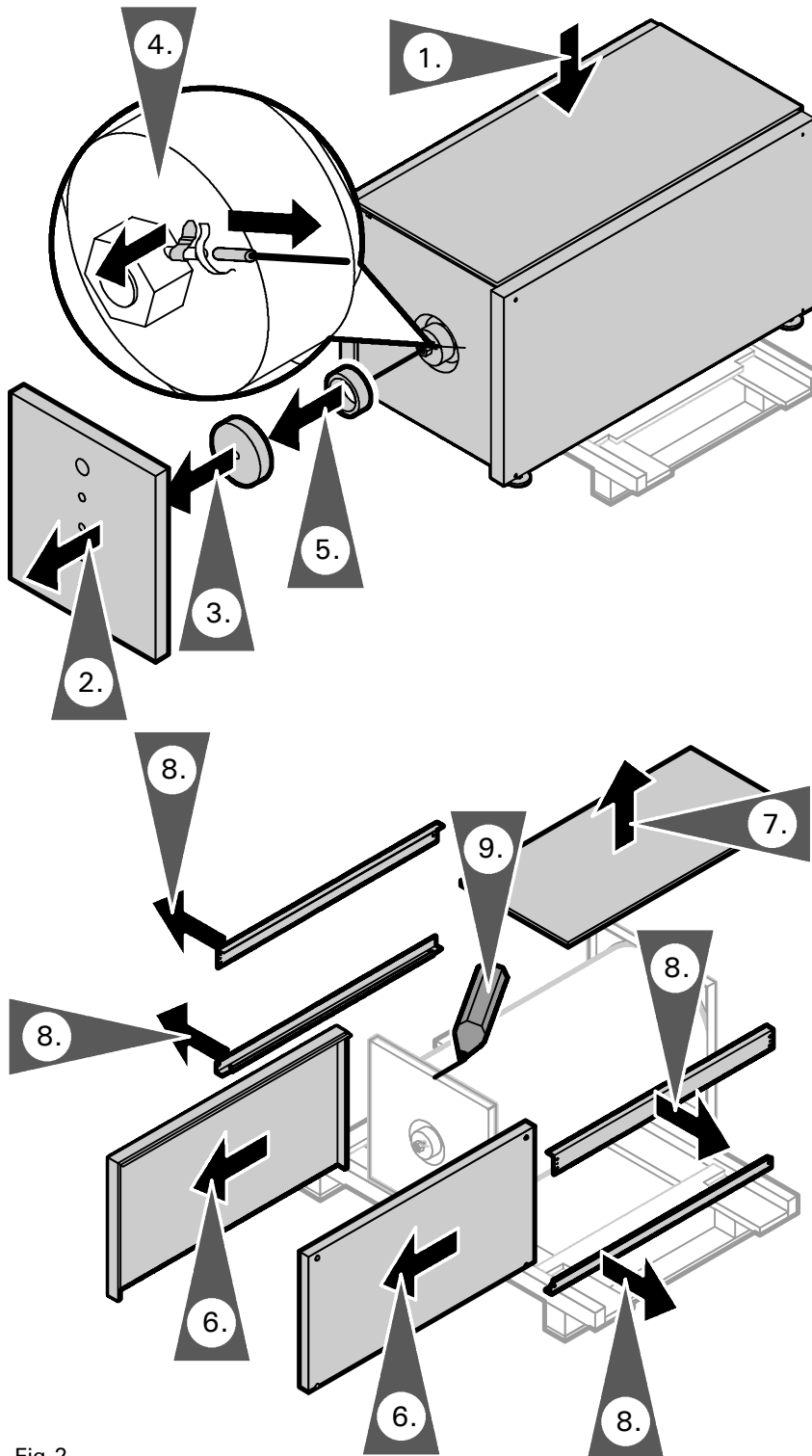
Storage capacity		USG	42	53	92	120
		Ltr	160	200	350	450
All sides		inches	0	0	0	0
		mm	0	0	0	0

Transport and Handling

only for 120 USG / 450 ltr capacity

Removing panels and insulation

The width of 35¾" / 910 mm can be reduced to 32" / 810 mm by removing panels and insulation.



1. Turn tank 90° to sit across its pallet.
2. Carefully unhook front panel.
3. Remove insulation.
4. Remove spring clip and carefully pull sensor of the thermometer out of tank cap.
5. Remove insulation ring.

6. Pull side panels forward to remove.
7. Unscrew top panel.
8. Unscrew support brackets.
9. Mark exact position of inner front panel on top edge of front panel and on tank insulation using a pencil.

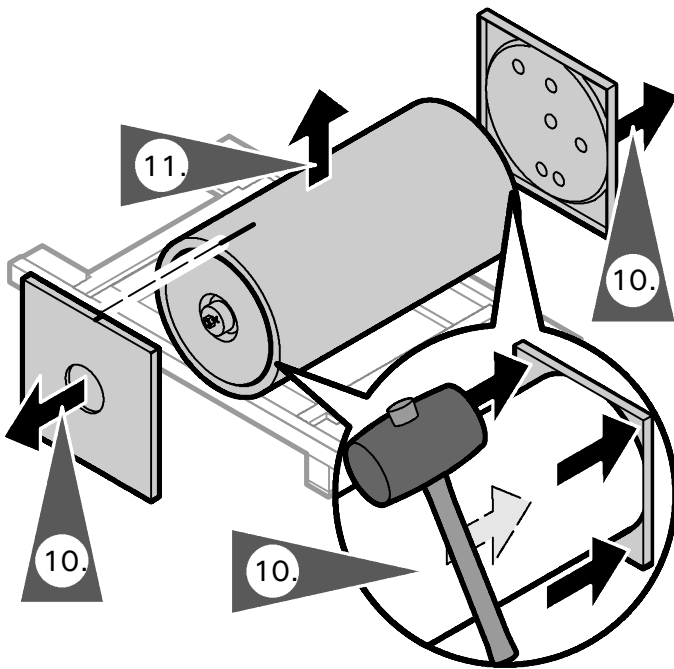


Fig 3.
Removing panels and insulation

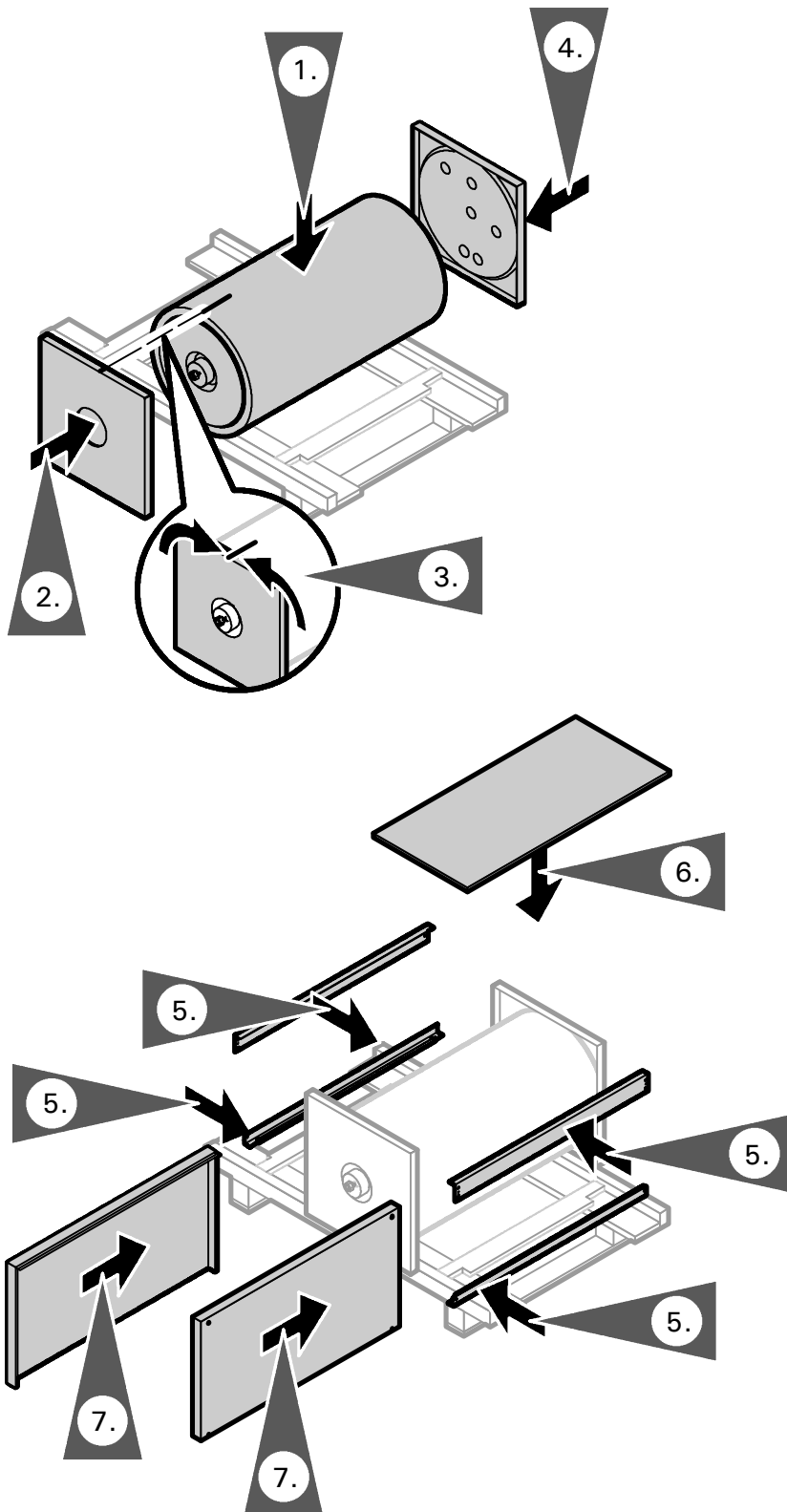
10. Using a flat piece of wood and a rubber mallet, **carefully** hammer inner front and rear panels off the four corners and remove.

11. Move tank into mechanical room.

Transport and Handling

only for 120 USG / 450 ltr capacity

Installing panels and insulation



1. Place tank on top of pallet again and turn 90° to sit across the pallet.

2. Push inner front panel onto tank housing.

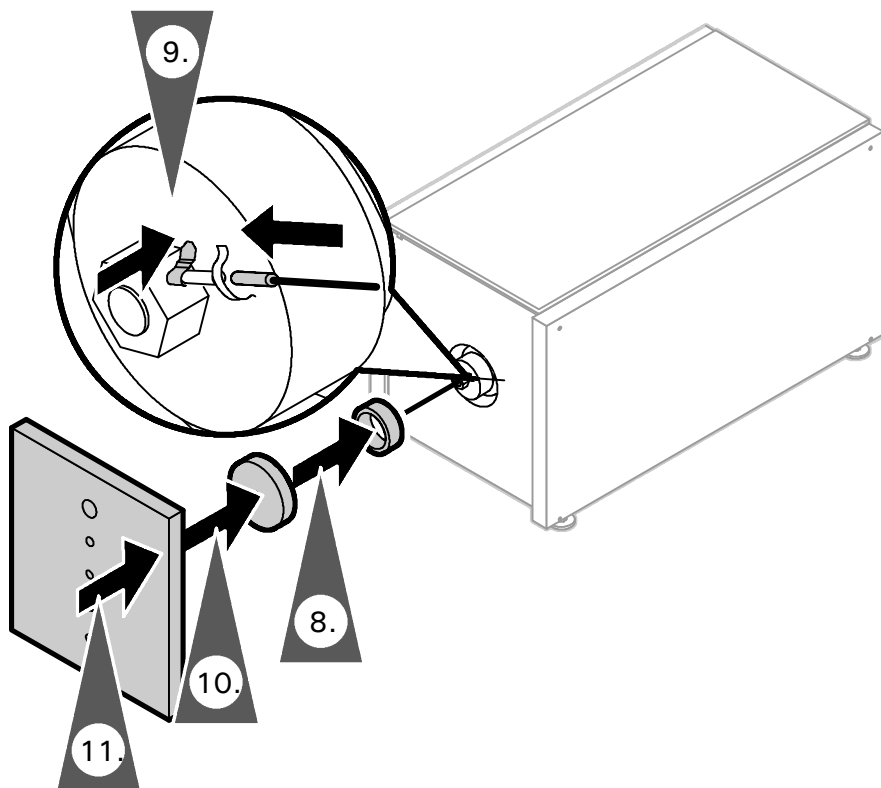
3. Position front panel according to pencil marks.

4. Push inner rear panel onto tank housing.

5. Fasten support brackets.

6. Install top panel.

7. Install side panels.



8. Mount insulation.

9. Fully insert sensor into opening in tank cap and secure using spring-clip.

10. Install insulation.

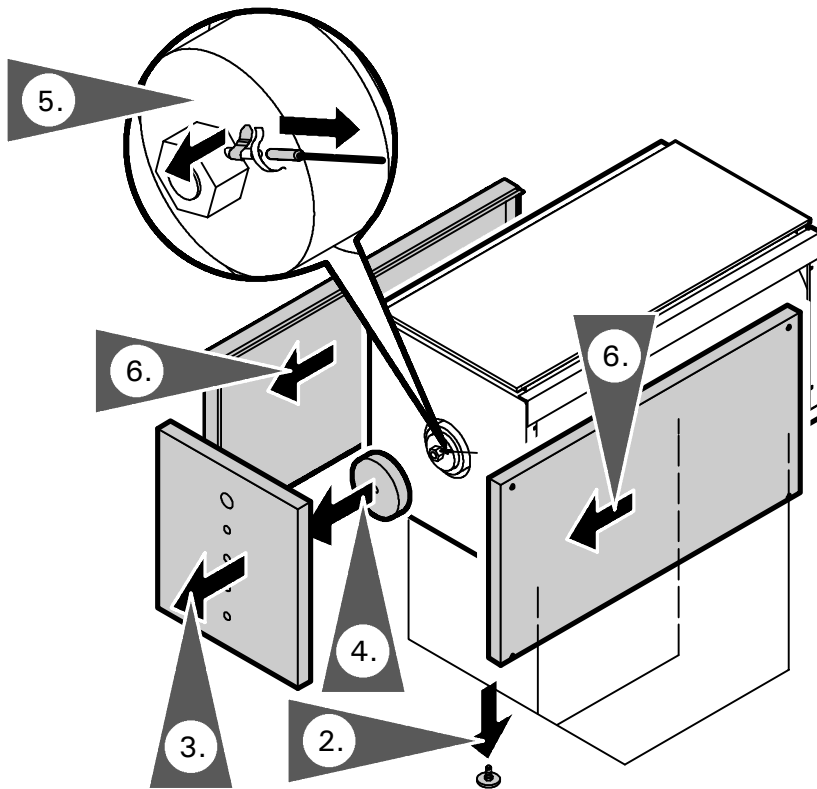
11. Install front panel.

Fig 5.
Installing panels and insulation

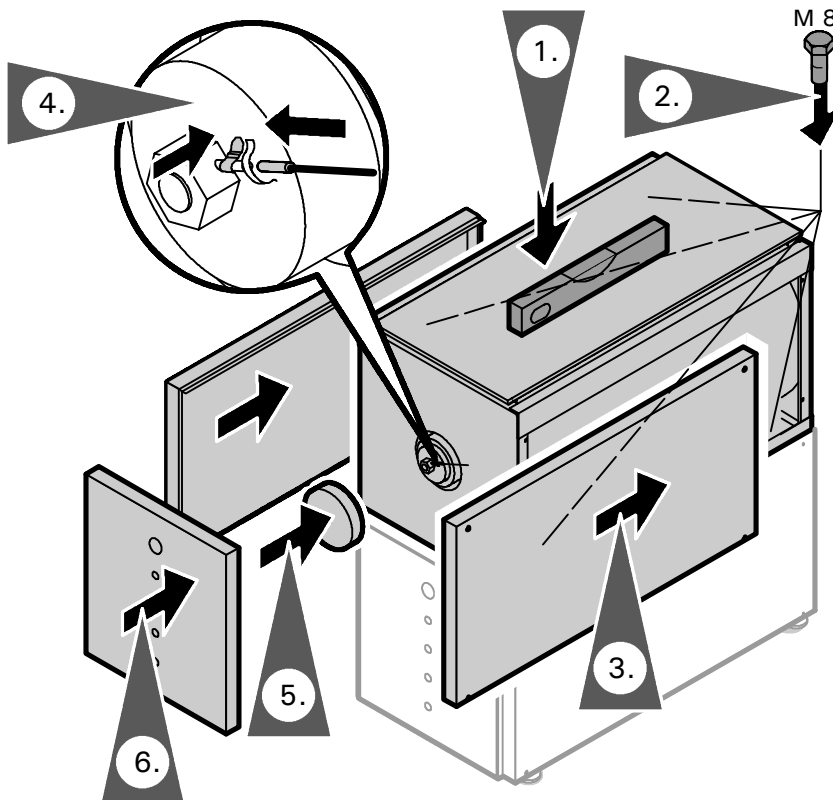
Multiple Tank Set-up

only for 92 and 120 USG / 350 and 450 ltr capacity

*Two tanks, each with 92 USG / 350 ltr content, and up to **three tanks**, each with 120 USG / 450 ltr content, may be stacked vertically.*



1. Set-up and orient lower tank in its final location.
2. Remove levelling bolts of top tank.
3. Carefully unhook front panel.
4. Remove insulation.
5. Remove spring clip and carefully pull sensor of the thermometer out of tank cap.
6. Pull side panels of top tank forward to remove.



1. Place top tank on top of bottom tank and align.
2. Take packaged M 8 bolts, drop in holes of top tank support brackets and fasten to bottom tank support brackets.
3. Reinstall side panels.








IMPORTANT

Install third tank (if applicable) in an identical fashion as the second tank.

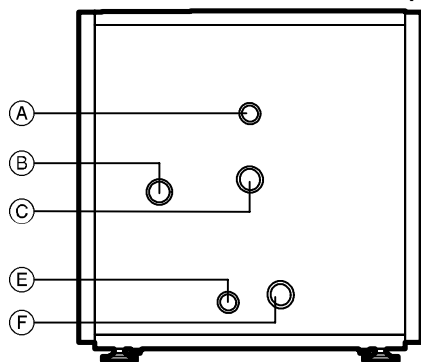
4. Fully insert sensor into opening in tank cap and secure using spring-clip.
5. Install insulation.
6. Install front panel.

Fig 6.
Installing tanks in a stacked fashion

Orientation and Dimensions

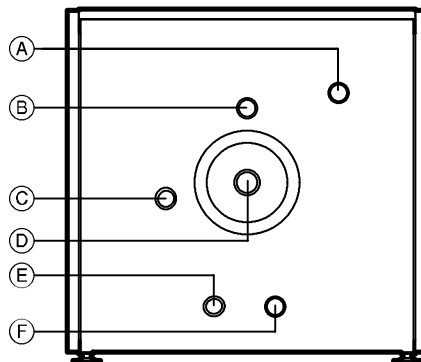
Storage capacity	USG Ltr	42 160	53 200	92 350	120 450	184 700	240 900	360 1350
Number of tanks		1	1	1	1	2	2	3
Layout								
Connections (individual tank)								
Heating water supply/return	Ø"	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Domestic cold/hot water	Ø"	3/4	3/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Pressure and temperature relief valve	Ø"	3/4	3/4	1	1 1/4	1	1 1/4	1 1/4

42 and 53 USG / 160 and 200 ltr capacity



- Ⓐ Domestic hot water supply, T&P valve
- Ⓑ Boiler water supply
- Ⓒ Aquastat well
- Ⓔ Domestic cold water supply
- Ⓕ Boiler water return

92 and 120 USG / 350 and 450 ltr capacity



- Ⓐ T&P valve (and recirculation tapping)
- Ⓑ Domestic hot water
- Ⓒ Boiler water supply
- Ⓓ Aquastat well
- Ⓔ Domestic cold water
- Ⓕ Boiler water return

Control Connections (Continued)

Installation of a DHW tank temperature sensor and/or aquastat

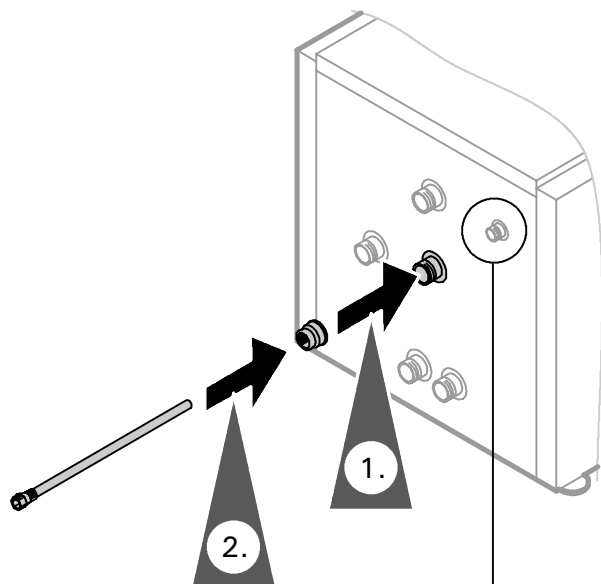


Fig 7.
Installing sensor well

Not present on 42 and 53 USG/
160 and 200 ltr version



WARNING

To ensure optimum, safe operation, the supplied stainless steel well must be installed. The well diameter is large enough to accommodate a wide variety of sensing bulbs.

Always use spring clip to ensure proper contact of capillary bulb against the stainless steel well for proper sensing/heat transfer!

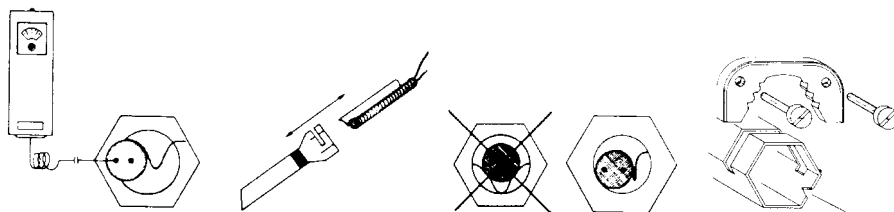


Fig 8.
Installing aquastat

1. Install reducing coupling (included in Connection Fitting Package). Use approved pipe sealant.

2. Install sensor well using sealant.

Where Vitotronic 200 or 300 is utilized to control DHW production:

3. Insert DHW tank temperature sensor (supplied with Vitotronic 200 or 300) fully and completely into sensor well.

IMPORTANT

Due to the length of the stainless steel well (15" / 380 mm), care must be taken to ensure that the sensing bulb of the limit is inserted and pushed to the end of the stainless steel well.

Where a Vitotronic 100 and a Viessmann Power/Pump Control Module are utilized to control DHW production:

4. Insert the extended capillary of the aquastat (supplied with Viessmann Power/Pump Control Module, not illustrated) fully and completely into sensor well. Mount aquastat inconspicuously on tank paneling. Follow instructions below with regard to sensor and spring clip installation.

... if aquastat is to be mounted remote from the aquastat well,

5. Align sensor bulb with spring clip.

6. Slide assembly into well.

7. The retention spring clip must press the bulb properly to ensure surface contact with the well.

... if aquastat is to be mounted directly on the tank well,

8. Mount aquastat with holding clip supplied directly onto well. Bend capillary tube into groove opening to allow for mounting of aquastat.

Boiler Water Connections (heat exchanger connection)

! WARNING

The operating aquastat and any secondary high limit aquastat of the tank must be set such that the DHW temperature inside the tank never exceeds 210°F / 99°C.

- Maximum working pressure on heat exchanger side up to 220 psig at 392°F / 200°C or a steam pressure of 15 psig at 250°F / 121°C
- Maximum working pressure on DHW water side of up to 150 psig at 210°F / 99°C

! DANGER

Domestic hot water temperatures over 125°F / 52°C can cause severe burns instantly or death from scalds. Children, disabled and elderly are at highest risk of being scalded. Feel water before bathing or showering. Temperature limiting valves are available and must be used where domestic hot water storage tank temperatures exceed 140°F / 60°C.

Individual DHW tank

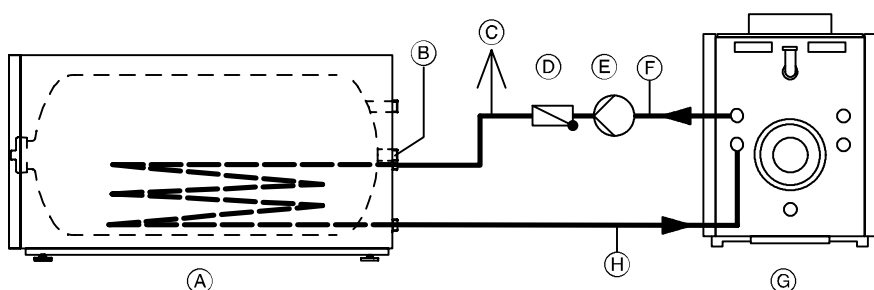


Fig 9.
Recommended piping of an individual tank

- | | |
|------------------------------------|------------------------------------|
| (A) Vitocell 300 | (D) Spring-loaded flow-check valve |
| (B) Sensor/Operating aquastat well | (E) Circulation pump |
| (C) Automatic air vent | (F) Boiler water supply |
| | (G) Boiler |
| | (H) Boiler water return |

1. Pipe together boiler and tank as illustrated. Connections must be accessible for service (use factory supplied adaptors). We recommend using Viessmann Flexible Piping of stainless steel (accessory).

2. For:

- boiler water supply temperatures over 203°F / 95°C and
- 92 and 120 USG / 350 and 450 ltr tanks:

Remove plastic supply and return grommets (grommets are left threaded).

3. Pipe supply line with an incline and install componentry as follows:

- flow check valve, to stop gravity circulation of hot water back to the boiler when the boiler temperature is lower than the actual tank temperature
- automatic air vent, at the high point from the boiler supply to the tank heat exchanger
- drain valve, on the boiler return piping from the tank heat exchanger coil
- isolation valve, on the boiler supply and boiler return piping to the tank coil.

4. Protect all domestic hot water drawpoints from excessive water temperatures via a tempering valve.

5. Install DHW tank temperature sensor in sensor well (see page 13 or 14).

6. Insulate piping.

IMPORTANT

This is a simplified conceptual drawing only! Piping and necessary componentry must be field verified. Proper installation and functionality in the field is the responsibility of the heating contractor.

IMPORTANT

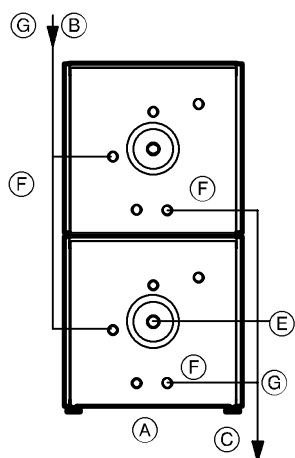
Use hemp and pipe dope on all threaded stainless steel nipples on tank.

Boiler Water Connections (Continued)

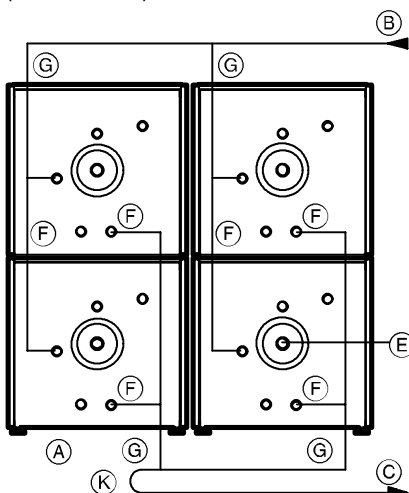
Multiple DHW tanks

only for 92 and 120 USG / 350 and 450 ltr capacity

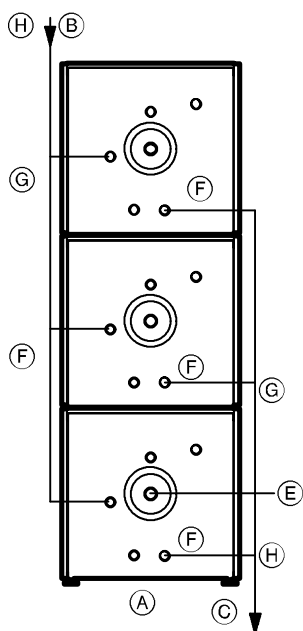
DHW tank battery with
184 and 240 USG /
700 and 900 ltr capacity
(dual cell)



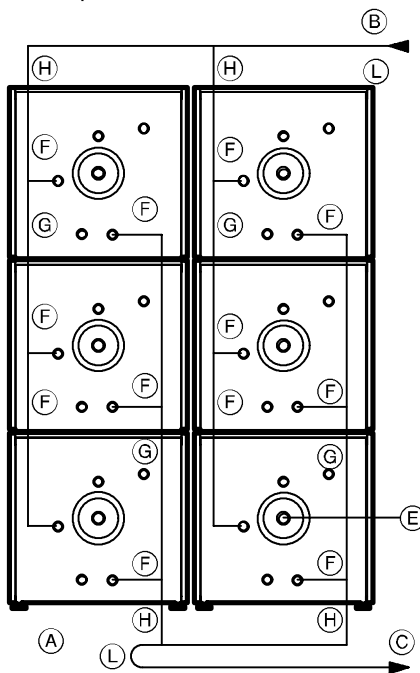
DHW tank battery with
2 x 184 and 2 x 240 USG /
2 x 700 and 2 x 900 ltr capacity
(2 x dual cell)



DHW tank battery with
1350 USG / 360 ltr capacity
(triple cell)



DHW tank battery with
2 x 1350 USG / 2 x 360 ltr capacity
(2 x triple cell)



All piping reverse return or use
balancing valves.

1. Pipe together boiler (not shown) and tanks as illustrated. Connections must be accessible for service (use factory supplied adaptors).

IMPORTANT

Use hemp and pipe dope on all threaded stainless steel nipples on tank.

2. For boiler water supply temperatures over 203°F / 95°C:
Remove plastic supply and return grommets (grommets are left threaded).
3. Pipe supply line with an elevation and install an automatic air vent at the highest point.
4. Install boiler sensor in sensor well (see page 14).
5. Insulate piping.

IMPORTANT

The circulation pump is activated by the sensor / operating aquastat and by the control system installed. The operating aquastat should be mounted on the tank which receives the boiler water supply last.

Viessmann recommends the installation of an additional high limit aquastat in the main discharge pipe of the DHW system. This aquastat should be wired in series with the operating aquastat and should be set approximately 9°F / 5°C higher than the operating aquastat.

WARNING

Install tempering valve(s) to protect against scalding.

WARNING

Do not stack more than three tanks.
Stack only tanks of identical size.

- 5167 535 v1.3
- (A) Vitocell 300
 - (B) Boiler water supply
 - (C) Boiler water return
 - (E) Operating aquastat

- (F) 1 1/4" *1
- (G) 2" *1
- (H) 3" *1
- (K) 4" *1
- (L) 5" *1

*1 Pipe size for boiler supply and return to heat exchanger.

Steam Heating Side Connections

only for 92 and 120 USG / 350 and 450 ltr capacity

*Do **not** use Vitocell indirect-fired hot water storage tanks in superheated steam applications.*

Use appropriate control strategy.

Control strategy must ensure that the values below are not exceeded.

Install a steam-side control to regulate DHW temperature and ensure that the DHW temperature does not exceed 210°F / 99°C.

WARNING

The operating aquastat and any secondary high limit aquastat of the tank must be set such that the DHW temperature inside the tank never exceeds 210°F / 99°C.

- Maximum working pressure on heat exchanger side up to 220 psig at 392°F / 200°C or a steam pressure of 15 psig at 250°F / 121°C
- Maximum working pressure on DHW water side of up to 150 psig at 210°F / 99°C

DANGER

Domestic hot water temperatures over 125°F / 52°C can cause severe burns instantly or death from scalds. Children, disabled and elderly are at highest risk of being scalded. Feel water before bathing or showering. Temperature limiting valves are available and must be used where domestic hot water storage tank temperatures exceed 140°F / 60°C.

Individual DHW tank

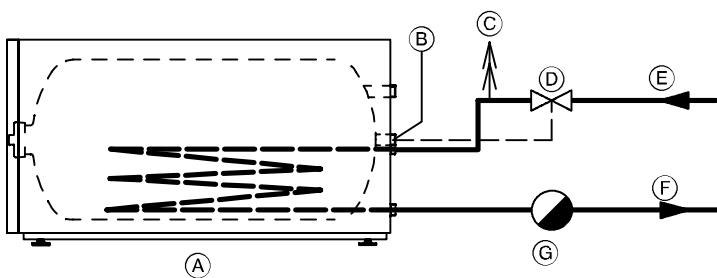


Fig 10.
Recommended piping of an individual tank in a steam system

- | | |
|--------------------------|------------------------------|
| (A) Vitocell 300 | (E) Steam supply line |
| (B) Sensor/Aquastat well | (F) Condensation return line |
| (C) Vacuum breaker | (G) Condensate trap |
| (D) Steam valve | |

1. Pipe steam and condensate lines as illustrated. Connections must be accessible for service (use factory supplied adaptors).

IMPORTANT

Use hemp and pipe dope on all threaded stainless steel nipples on tank.

2. Remove plastic grommets on tank where condensate lines connect (grommets are left threaded).
3. Install DHW tank temperature sensor in sensor well; install steam valve.



*Installation Instructions
Control Valve*

4. Insulate piping.

CAUTION

For steam applications, a field supplied 1" T&P valve must be utilized.

Steam Heating Side Connections

only for 92 and 120 USG / 350 and 450 ltr capacity

Multiple DHW tanks

The following installation is also subject to local codes and requirements:

- Install a steam valve and vacuum breaker between steam supply line and each tank.

Install a drain with a condensate trap at the end of the steam supply line to each steam valve.

Install a condensate trap on each heat exchanger outlet before connecting all condensate lines to a common condensate return line.

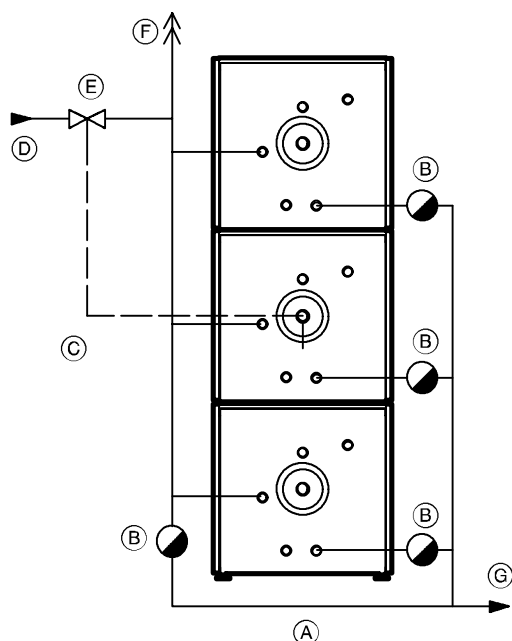
or

- Install a steam valve in the common steam supply line.

Install a vacuum breaker after the steam valve.

Install a drain with a condensate trap at the end of the steam supply line to each steam valve.

Install a condensate trap on each heat exchanger outlet before connecting all condensate lines to a common condensate return line.



- (A) Vitocell 300
- (B) Condensate trap
- (C) Sensor/Aquastat well
- (D) Steam supply

- (E) Steam valve
- (F) Vacuum breaker
- (G) Condensate line

All piping reverse return.

1. Pipe together steam and condensate lines as illustrated. Connections must be accessible for service (use factory supplied adaptors).
2. Remove plastic grommets on each tank where steam and condensate lines connect (grommets are left threaded).
3. Install an approved type high limit aquastat for temperature control of domestic hot water on each tank.
4. Install aquastat temperature sensor in sensor well; install steam valve.
5. Insulate piping.

WARNING

**Do not stack more than three tanks.
Stack only tanks of identical size.**

IMPORTANT

To ensure uniform heating of domestic hot water within each tank battery, install domestic hot water recirculation as illustrated on pages 21 and 22. Cap any unused recirculation connection on each tank. Follow the control and safety recommendations of the respective steam boiler manufacturer.

Fig 11.
Recommended piping of a tank battery in a steam system

IMPORTANT

Use hemp and pipe dope on all threaded stainless steel nipples on tank.

Domestic Water Connections

Ensure that local rules and regulations regarding this type of product have been observed.

DHW tank battery with
184 and 240 USG /
700 and 900 ltr capacity
(dual cell)

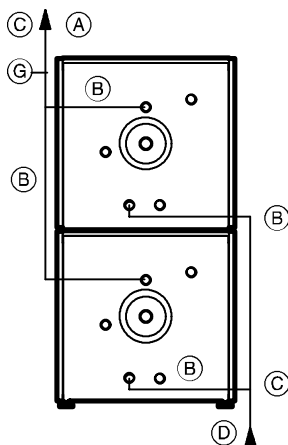


Fig 12.

DHW tank battery with
2 x 184 and 2 x 240 USG /
2 x 700 and 2 x 900 ltr capacity
(2 x dual cell)

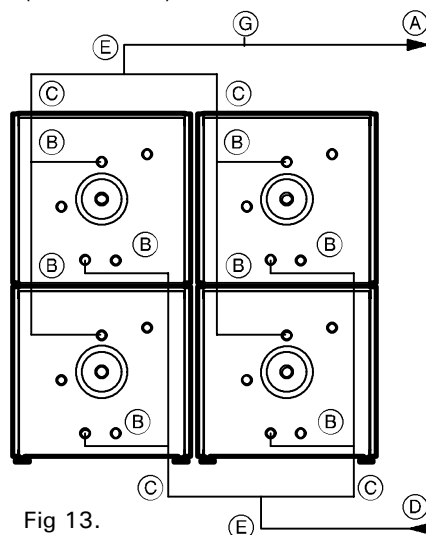


Fig 13.

DHW tank battery with
360 USG / 1350 ltr capacity
(triple cell)

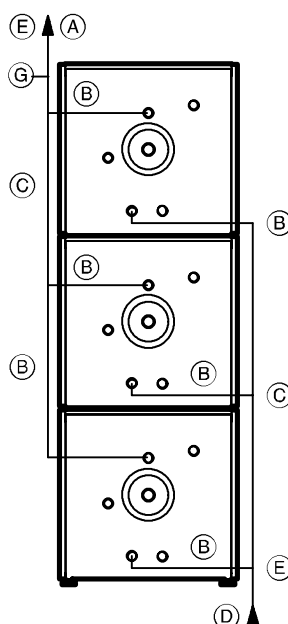


Fig 14.

DHW tank battery with
2 x 360 USG / 2 x 1350 ltr capacity
(2 x triple cell)

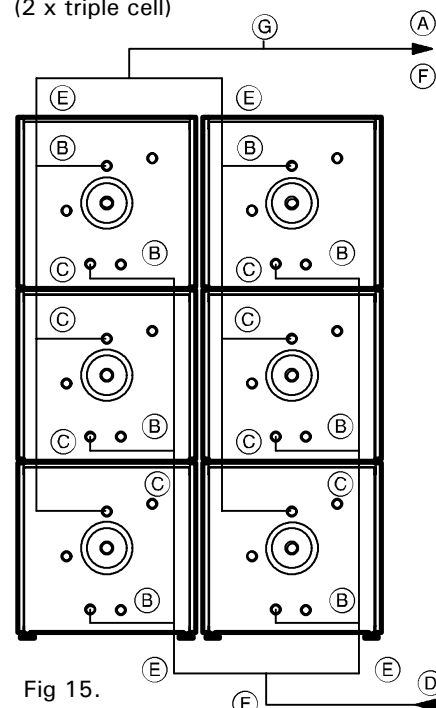


Fig 15.

- (A) Domestic hot water
- (B) 1 1/4" *1
- (C) 1 1/2" *1

- (D) Domestic cold water
- (E) 2" *1
- (F) 2 1/2" *1
- (G) Secondary high limit aquastat

*1 Pipe size for domestic cold and hot water piping

All piping reverse return.

1. Pipe boiler and tank as illustrated. Connections must be accessible for service (use factory supplied adaptors).

IMPORTANT

Use hemp and pipe dope on all threaded stainless steel nipples on tank.

2. Insulate domestic hot water piping and valves.

IMPORTANT

In order to avoid temperature stratification Viessmann recommends the use of a small recirculation pump between the DHW supply point (A) and the DCW supply point (D) in multiple tank arrangements (Figs 14 and 15). The recirculation pump will only operate when there is no DHW draw from the tank batteries.

Domestic Water Connections (Continued)

42 and 53 USG / 160 and 200 ltr capacity

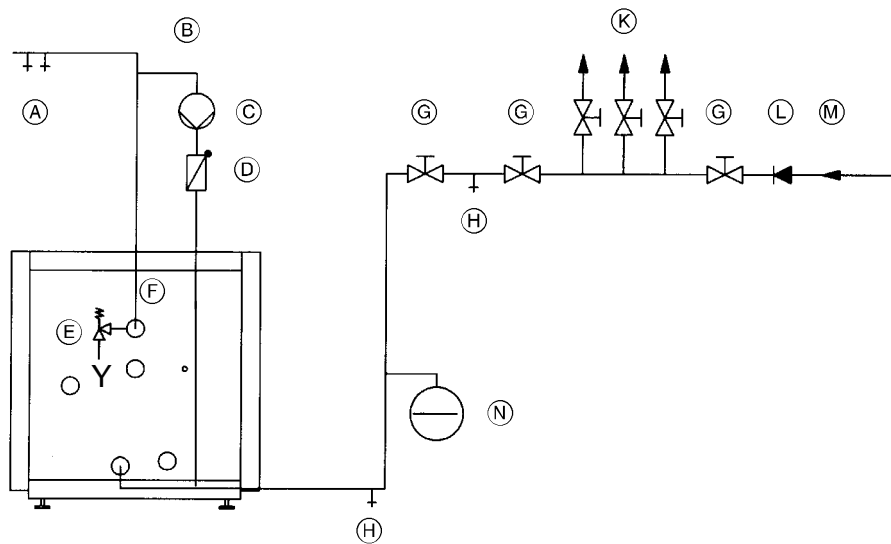


Fig 16.

92 and 120 USG / 350 and 450 ltr capacity

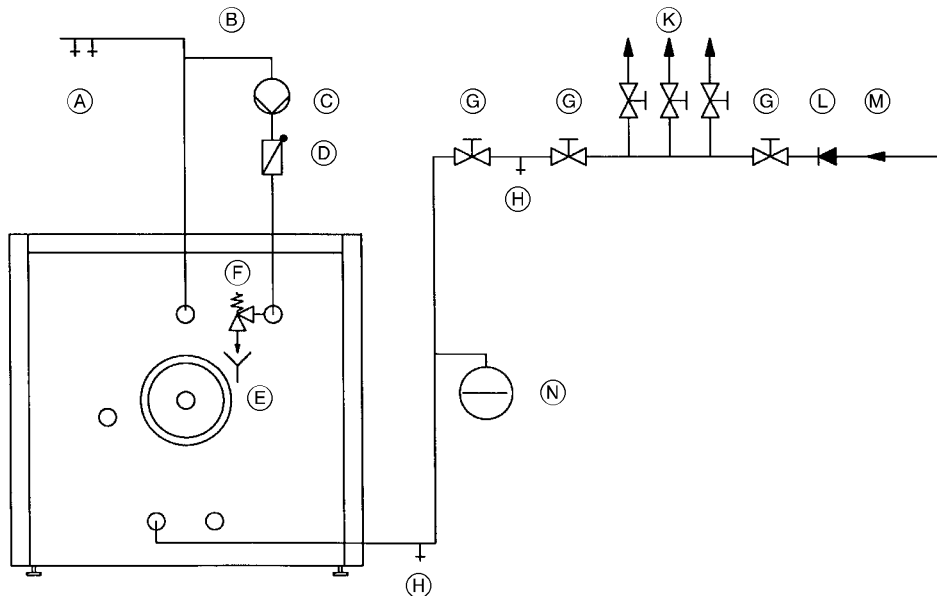


Fig 17.

- (A) Domestic hot water supply
- (B) DHW recirculation line
- (C) DHW recirculation pump
- (D) Spring loaded check valve
- (E) Discharge pipe
- (F) Pressure and temperature relief valve

- (G) Shut-off valve
- (H) Drain
- (K) Domestic cold water supply lines
- (L) Back-flow preventer
- (M) Domestic cold water inlet

- (N) Precharged expansion tank
(required where back-flow preventer is installed; check local plumbing codes and requirements)

Domestic Water Connections (Continued)

Always ensure the use of approved type devices. Safety devices include the following components:

IMPORTANT

Use hemp and pipe dope on all threaded stainless steel nipples on tank.

- Isolation valves
- Drain valve
- Pressure reducing valve where required by local jurisdiction
- Drinking water filter where required by local jurisdiction
- Back-flow preventer
Where backflow preventers are required, a domestic water expansion tank installation is required in the cold water inlet piping before the cold water enters the tank. The back-flow device must be installed according to the manufacturer's installation instructions. Observe local codes and regulations.
- Tempering valve

A tempering valve must be field installed where storage tank (domestic hot water temperature) exceeds local restricted temperatures or 140°F / 60°C. Check code requirements.

IMPORTANT

In situations where a booster pump is used to maintain DHW pressure, Viessmann strongly recommends the installation of an oversized large expansion tank to ensure longer, less frequent pump cycles with less severe pressure gradients. If possible, use flexible piping before and after booster pump to isolate system piping from vibration and shocks.

- Temperature and pressure relief valve

A temperature and pressure relief valve (T&P relief valve) is supplied with the tank. The heating contractor must install the valve on each tank in a method meeting code requirements. If local codes require a different relief valve, substitute the manufacturer's supplied valve. The tank is approved for 100 psig where a CRN is required. Maximum operating pressure is 150 psig.

The T&P relief valve supplied with the tank is manufactured by Watts Industries (Model 40XL-8) set to 100 psi for Canadian installations and set to 150 psi for US installations (where applicable). The valve is ASME pressure steam rated for 998 MBH and CSA temperature steam rated for 200 MBH. It is tested under ANSI Z21.22 code for Relief Valves and Automatic Gas Shut-off Devices for Hot Water Supply Systems. The relief temperature is set at 210°F / 99°C. The valve has a male threaded inlet and female threaded outlet, both ¾" sizes.

For steam applications, a field supplied 1" T&P valve must be utilized.

Proper installation of the T&P valve shall include all of the following:

- The T&P valve shall be installed in the pipe connection point marked TPV in the tank instruction manual.
- The discharge line from the T&P valve shall be ¾" / 1.9 cm Ø and run to a safe place of discharge approximately 1 ft / 30 cm above the floor, close to a floor drain.
- The discharge line must be as short as possible and pitch downward from the T&P valve and terminate plain.



WARNING

The discharge line for the T&P valve must be oriented to prevent scalding of attendants.

- Do **not** route discharge line to the outdoors.
- Do **not** install any type of valve or an obstruction of any kind between the tank and the T&P valve, or between the T&P valve and the discharge line outlet.

The valve test lever must be operated at least once per year by the owner to ensure that waterways are clear. A licensed professional heating contractor shall reinspect the T&P valve at least once every three years. Failure to inspect can result in unsafe temperature or pressure build-up, which can result in death, serious injury or substantial product/property damage.

Recirculation Connections

- Pipe domestic hot water supply piping with tank as illustrated. Connections must be accessible for service (use factory supplied adaptors). Connection sizes are provided in section entitled Orientation and Dimensions on page 12.
- Install recirculation pump, flow-check valve and recirculation timer (for shut-down during off-hours where feasible) on the recirculation piping side.
- Gravity circulation of the recirculation system is restricted due to the upward-curved domestic hot water discharge piping inside the tank.
- Connect tank battery to existing recirculation piping. Cap off unused recirculation connections of individual tanks.

Connection of a recirculation system in a multiple tank installation for systems utilizing boilers or remote heating plants **without** low temperature boiler return water and for steam heating operation with 15 psi and one recirculation line (Fig 18.)

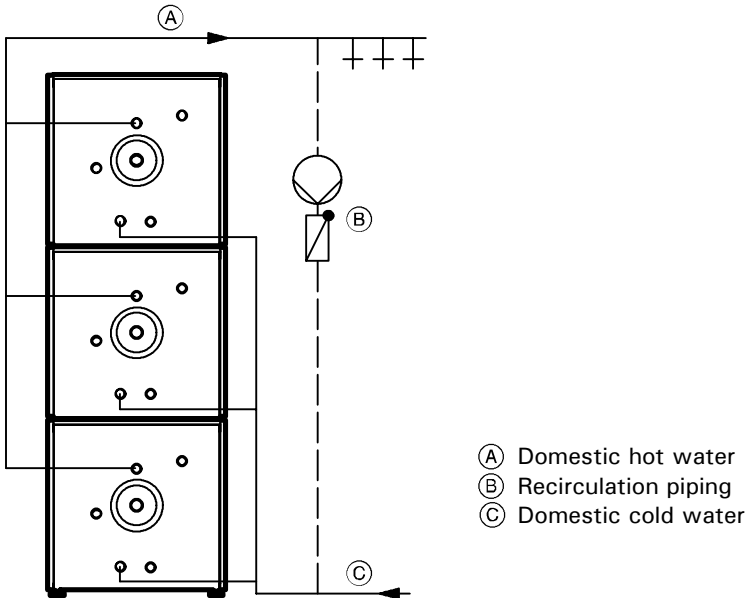


Fig. 18.

Connection of a recirculation system in a multiple tank installation for remote heating plants **with** low temperature boiler return water limit and/or for multiple recirculation lines (Fig 19.)

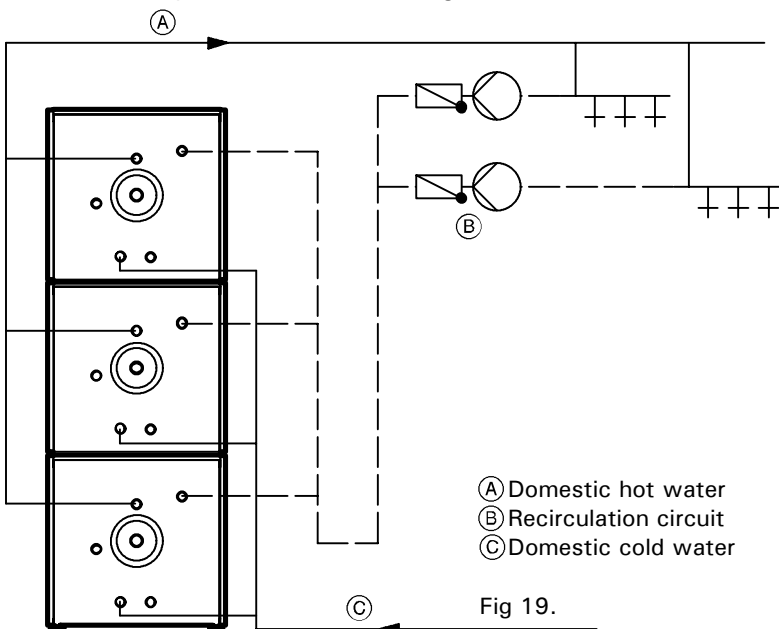


Fig 19.

Saving Energy

A timer on the recirculation pump reduces the heat loss significantly in commercial applications during times when no or reduced demand for domestic hot water occurs.

Recirculation Connections

Recirculation tapping

only for 92 and 120 USG / 350 and 450 ltr capacity

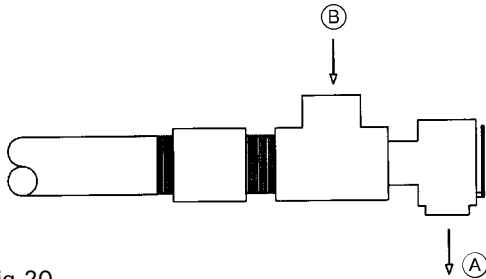


Fig 20.

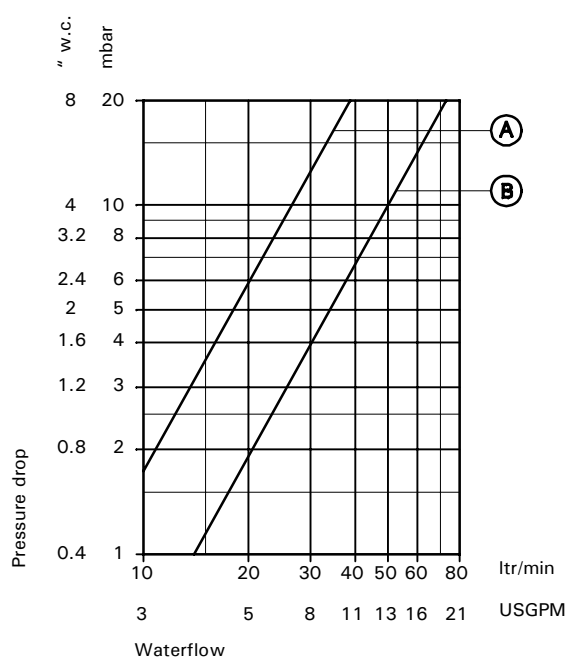
- Ⓐ Pressure and temperature relief valve discharge
- Ⓑ Recirculation connection

The recirculation tapping on the tank is also the opening for mounting the temperature and pressure relief valve (T&P valve).

If this opening is utilized for recirculation, extend the stainless steel nipple on the tank with a brass tee (field supplied) of the same size as the stainless steel nipple diameter to accommodate both connections (see Fig 20).

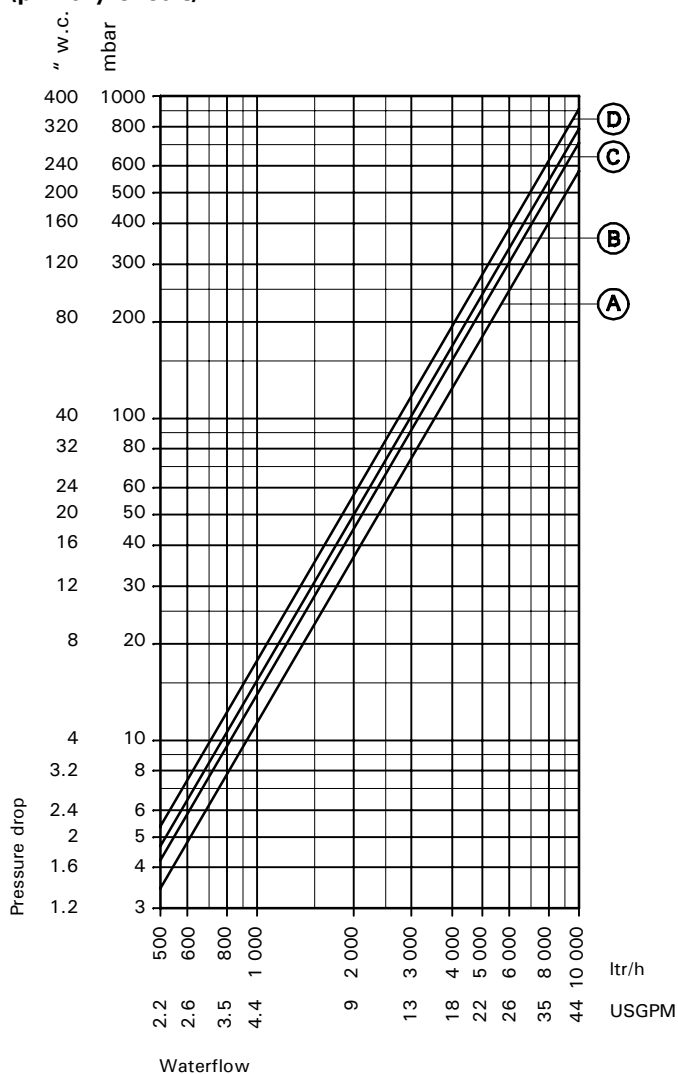
Pressure Drop Information

Pressure drop on domestic hot water side (secondary circuit)



- Ⓐ 42 and 53 USG / 160 and 200 ltr storage capacity
 Ⓑ 92 and 120 USG / 350 and 450 ltr storage capacity

Pressure drop on heating water side (primary circuit)



- Ⓐ 42 USG / 160 ltr storage capacity
 Ⓑ 53 USG / 200 ltr storage capacity
 Ⓒ 92 USG / 350 ltr storage capacity
 Ⓓ 120 USG / 450 ltr storage capacity

Post Installation ...

Start-up information



*Start-up/Service Instructions
DHW Tank*

Service Binder

1. File all Parts Lists, Operating and Service Instructions in the Service Binder.

2. Install a protective hanging case near the boiler and store the Service Binder in this location.

For a listing of applicable Viessmann literature, please see Important Regulatory and Installation Requirements.

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Technical information subject to change without notice.